



disposed on the outside of the side wall of the belljar, for generating induced electromagnetic fields in the belljar; a first high-frequency electric power source for supplying high-frequency electric power to the antenna means; gas supply means for supplying a plasma generating gas which is dissociated by the induced electromagnetic fields generated by the antenna means to be plasmas, and a processing gas for the plasma processing; a Faraday shield disposed between the belljar and the antenna means; a [[flat]] conducting member disposed upper of the top wall, opposed to the mount, being grounded; and a second high-frequency electric power source for supplying high-frequency electric power to the mount,

high-frequency electric power being supplied from the second high-frequency electric power source to generate electric fields between the mount and the conducting member and to ignite plasmas based on only the high frequency power from said mount to said grounded conducting member, and then, after ignition is achieved with said second high-frequency electric power source, high-frequency electric power being supplied from the first high-frequency electric power source to the antenna means is initiated to generate induced electromagnetic fields in the belljar to generate inductive coupled plasmas, whereby the plasma processing is made on the substrate-to-be-processed.

Claim 7. (Currently Amended) A plasma processing method according to claim 5 [[6]], wherein

the second high-frequency electric power source stops supplying high-frequency electric power after the first high-frequency electric power source has started the supply of the high-frequency electric power.

Claim 8. (Currently Amended) A plasma processing method according to claim 5 any one of claims 5 to 7, wherein

the plasma processing is performed while the substrate-to-be-processed is being heated.

Claim 9. (Original) A plasma processing method according to claim 8, wherein

the plasma processing is for removing natural oxide films formed on the substrate-to-be-processed.

Claim 10. (Original) A plasma processing method according to claim 9, wherein the plasma generating gas and the processing gas are argon gas and hydrogen gas.

Claim 11. (Currently Amended) A plasma processing method according to claim 10, wherein the first high-frequency electric power source is ~~connect~~ connected to an upper end portion of the antenna means.

Claims 12 and 13 (Cancelled)

Claim 14. (New) A plasma processing method according to claim 5, wherein after the induced electromagnetic fields are generated, said second high-frequency electric power source is shut down.

Claim 15. (New) A plasma processing method according to claim 6, wherein the second high-frequency electric power source stops supplying high-frequency electric power after the first high-frequency electric power source has started the supply of the high-frequency electric power.

Claim 16. (New) A plasma processing method according to claim 6, wherein the plasma processing is performed while the substrate-to-be-processed is being heated.

Claim 17. (New) A plasma processing method according to claim 16, wherein the plasma processing is for removing natural oxide films formed on the substrate-to-be-processed.

Claim 18. (New) A plasma processing method according to claim 17, wherein the plasma generating gas and the processing gas are argon gas and hydrogen gas.

Claim 19. (New) A plasma processing method according to claim 18, wherein the first high-frequency electric power source is connected to an upper end portion of the antenna means.

Claim 20. (New) A plasma processing method according to claim 6, wherein after the induced electromagnetic fields are generated, said second high-frequency electric power source is shut down.

Claim 21. (New) A plasma processing method according to claim 5, wherein said conducting member has a surface which opposes said belljar that is a flat surface.

Claim 22. (New) A plasma processing method according to claim 21 wherein said conducting member is a flat disc object.

Claim 23. (New) A plasma processing method according to claim 5 wherein said grounded conducting member is not directly electrically coupled to a high-frequency electric power source.

Claim 24. (New) A plasma processing method according to claim 6, wherein said conducting member has a surface which opposes said belljar that is a flat surface.

Claim 25. (New) A plasma processing method according to claim 24 wherein said conducting member is a flat disc object.

Claim 26. (New) A plasma processing method according to claim 6 wherein said grounded conducting member is not directly electrically coupled to a high-frequency electric power source.